

CLAIMS

1. A method of producing a positive electrode active material for a non-aqueous electrolyte secondary battery, comprising the steps of:

(a) preparing a raw material mixture, comprising
"nx" mol of magnesium,
"ny" mol of an element M, said element M being at least one selected from the group consisting of Al, Ti, Sr, Mn, Ni and Ca,

"n(1-x-y)" mol of cobalt and

"nz" mol of lithium,

such that the values n, x, y and z satisfy

$0 < n,$

$0.97 \leq (1/z) \leq 1,$

$0.005 \leq x \leq 0.1,$ and

$0.001 \leq y \leq 0.03;$ and

(b) baking said raw material mixture in an oxidization atmosphere at 1000 to 1100 °C.

2. The method of producing a positive electrode active material for a non-aqueous electrolyte secondary battery in accordance with claim 1, comprising a step of re-baking said baked raw material mixture at 300 to 750 °C, after said step (b).

3. The method of producing a positive electrode active material for a non-aqueous electrolyte secondary

battery in accordance with claim 1, wherein said raw material mixture contains a hydroxide or oxide of cobalt doped with magnesium.